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10/053,461	11/07/2001	Yeshik Shin	594728117US	3693
25096	7590	08/23/2005	EXAMINER	
PERKINS COIE LLP			KHUONG, LEE T	
PATENT-SEA				
P.O. BOX 1247			ART UNIT	PAPER NUMBER
SEATTLE, WA 98111-1247			2665	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/053,461

Applicant(s)

SHIN ET AL.

Examiner

Lee Khuong

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-24 and 26-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-24 and 26-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-6, 8, 10-16, 19-24, 27-35, 37-44, 47-52, 54 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sonnier, (5,574,849) et al, hereinafter is referred as Sonnier.

**Regarding claims 1 and 19,** Sonnier teaches *a method and a device for transmitting control information during transmission of packets comprising:*

*transmitting symbols of the packet, the symbols of the packet including in-band symbols* (see Fig. 1, col. 65, lines 40-52, **command BUSY/FILL/IDLE symbols are transmitted**); and

Art Unit: 2665

*when control information is to be transmitted* (see col. 65, lines 48-49, **when the IDLE command symbol is about to be transmitted**), *stopping the transmitting of the symbols of the packet* (see col. 65, lines 51-52, **stopping the transmission of a message packet by sending the interrupt FILL command symbol**);

*transmitting an out-of-band symbol representing the control information* (see col. 65, lines 48-49, **transmitting the IDLE command symbol represents the control information**); and

*after the out-of-band symbol is transmitted, continuing with the transmitting of the symbols of the packet that have not yet been transmitted* (see col. 65, lines 49-51, **the transmission of the interrupted message packet is resumed after the receiving element is ready and the IDLE command symbol is transmitted**).

Sonnier does not expressly teach the transmitting in-band symbols are transition optimized and transmitting a control information of an out-of-band symbol that is not transition optimized to stop the transmitting of the symbols of the packet.

Sonnier does expressly teach *transmitting in-bands symbols* (see col. 65, lines 40-52) and *transmitting an out-of-band control symbol by sending the interrupt FILL command symbol to stop the transmitting of the symbols of the packet* (see col. 65, lines 51-52) to optimize the transmitting in-band control information symbols and to interrupt/to not optimize with the FILL command symbol during transmission of packets.

It would have been obvious to one of ordinary skill in the art, at the time invention was made, to employ the Synchronized Data Transmission Between Elements Of A Processing System as taught by Sonnier to arrive the claimed invention as specified in claims 1 and 19.

Art Unit: 2665

The suggestion/motivation for doing so would have been to make large improvements in reliability for communication between connecting devices (see col. 1, line 65 – col. 2, line 12).

**Regarding claims 2, 20, 30 and 48,** Sonnier teaches *the out-of-band symbol is one of two out-of-band symbols that form a primitive* (see col. 65, lines 48, **inserting interrupt IDLE symbol**).

**Regarding claims 3, 21, 31 and 49,** Sonnier teaches one symbol of the primitive has a negative disparity and the other symbol of the primitive has a positive disparity (see col. 27, Table 1, **most three significant bits determines the disparity**).

**Regarding claims 4, 22, 32 and 50,** Sonnier teaches the primitive has a neutral disparity (see col. 27, Table 1, **most three significant bits determines the disparity**).

**Regarding claims 5, 23, 33 and 51,** Sonnier teaches *the transmitting of the primitive has minimal effect on running disparity* (see col. 27, Table 1, **the command information has minimal effect on the command symbols transmissions**).

**Regarding claims 6, 24, 34 and 52,** Sonnier teaches *the transmitting of the out-of-band symbol has minimal effect on running disparity* (see col. 27, Table 1, **transmitting IDLE symbol has minimal effect**).

Art Unit: 2665

**Regarding claims 8 and 35,** Sonnier teaches *receiving the symbols of the packet via one port of a switch and transmitting the symbols of the packet via another port of the switch* (see col. 13, lines 19-34, **redundant communication paths between any CPUs 12, router 14A', in port 4, out port 3**).

**Regarding claims 10, 27, 37 and 54,** Sonnier teaches *the control information controls a data store device* (see col. 16, lines 39-53, col. 47, lines 1-6, **command symbols communicates between CPUs, I/O packet interfaces to transfer instructions and data of a storage device**).

**Regarding claims 11 and 28,** Sonnier teaches *wherein the symbols of the packet can include non-contiguous out-of-band* (see col. 65, line 43 – col. 66, line 11, **command FILL or IDLE symbols are inserted until receiving a non-contiguous out-of-band READY command symbol and the transmission of the message packet can resume**) *and wherein the control information includes contiguous out-of-band symbols* (see col. 65, line 43 – col. 66, line 11, **command FILL symbols are inserted continuously until the transmission of the message packet can resume**).

**Regarding claim 12,** Sonnier teaches *a method and a device for receiving control information while receiving a packet of symbols comprising:*

*receiving a first portion of symbols of the packet* (see col. 65, lines 40-47, **the receiving side is busy during a middle of receiving a message packet**), *receiving an out-of-band symbol*

Art Unit: 2665

*representing the control information* (see Fig. 1, col. 65, lines 47-49, **receiving the IDLE command symbol**); *and*

*after receiving the out-of-band symbol, receiving a second portion of the symbols of the packet* (see col. 65, lines 49-52, **resume receiving the interrupted message packet**);

*wherein the control information interrupts the reception of the packet of symbols* (see col. 65, lines 41-42 and lines 51-52, **inserting the interrupt FILL command symbol**).

Sonnier does not expressly teach the received first portion of symbols of the packet are in-band symbols that are transition optimized and after the received first portion of symbols, receiving an out-of-band symbol that is not transition optimized representing the control information.

Sonnier does expressly teach *receiving in-bands symbols* (see col. 65, lines 40-52) and *receiving an out-of-band control symbol by receiving the interrupt FILL command symbol to stop the transmitting of the symbols of the packet* (see col. 65, lines 51-52) to optimize the transmitting in-band control information symbols and to interrupt/to *not optimize* with the FILL command symbol during transmission of packets.

It would have been obvious to one of ordinary skill in the art, at the time invention was made, to employ the Synchronized Data Transmission Between Elements Of A Processing System as taught by Sonnier to arrive the claimed invention as specified in claim 12.

The suggestion/motivation for doing so would have been to make large improvements in reliability for communication between connecting devices (see col. 1, line 65 – col. 2, line 12).

Art Unit: 2665

**Regarding claims 13 and 40**, Sonnier teaches *the out-of-band symbol is one symbol of primitive comprising multiple symbols* (see col. 65, lines 40-52).

**Regarding claims 14 and 41**, Sonnier teaches *the primitive comprises two out-of-band symbols* (see col. 65, lines 48-49).

**Regarding claims 15 and 42**, Sonnier teaches *combining the first portion of the symbols with the second portion of symbol to form the packet of symbols* (see col. 65, lines 40-52).

**Regarding claims 16 and 43**, Sonnier teaches *the control information is link control information* (see col. 50, lines 66-67 and col. 51, lines 1-12).

**Regarding claims 29 and 47**, Sonnier teaches *a method and a device for transmitting control information during transmission of packets, comprising:*

*transmitting symbols of the packet, the symbols of the packet including in-band symbols* (see Fig. 1, col. 65, lines 40-52, **command BUSY/FILL/IDLE symbols are transmitted**) *and non-contiguous out-of-band symbols* (see col. 65, line 43 – col. 66, line 11, **command FILL or IDLE symbols are inserted until receiving a non-contiguous out-of-band READY command symbol and the transmission of the message packet can resume**); and

*when control information is to be transmitted* (see col. 65, lines 48-49, **when the IDLE command symbol is about to be transmitted**), *stopping the transmitting of the symbols of the*



Art Unit: 2665

*packet* (see col. 65, lines 51-52, **stopping the transmission of a message packet by sending the interrupt FILL command symbol**);

*transmitting contiguous out-of-band symbols representing the control information* (see col. 65, lines 48-49, **transmitting the IDLE command symbol represents the control information**); and

*after the out-of-band symbols are transmitted, continuing with the transmitting of the symbols of the packet that have not yet been transmitted* (see col. 65, lines 49-51, **the transmission of the interrupted message packet is resumed after the receiving element is READY and the IDLE command symbols are transmitted**).

**Regarding claims 38 and 55**, Sonnier teaches all limitations set forth in the rejection of claims 29 and 47.

Sonnier does not expressly teach the transmitting in-band symbols are transition optimized and transmitting a control information of an out-of-band symbol that is not transition optimized to stop the transmitting of the symbols of the packet.

Sonnier does expressly teach *transmitting in-bands symbols* (see col. 65, lines 40-52) and *transmitting an out-of-band control symbol by sending the interrupt FILL command symbol to stop the transmitting of the symbols of the packet* (see col. 65, lines 51-52) to optimize the transmitting in-band control information symbols and to interrupt/to not optimize with the FILL command symbol during transmission of packets.

Art Unit: 2665

It would have been obvious to one of ordinary skill in the art, at the time invention was made, to employ the Synchronized Data Transmission Between Elements Of A Processing System as taught by Sonnier to arrive the claimed invention as specified in claims 38 and 47.

The suggestion/motivation for doing so would have been to make large improvements in reliability for communication between connecting devices (see col. 1, line 65 – col. 2, line 12).

**Regarding claim 39**, Sonnier teaches *a method and a device for receiving control information while receiving a packet of symbols comprising:*

*receiving a first portion of symbols of the packet* (see col. 65, lines 40-47, **the receiving side is busy during a middle of receiving a message packet**), *the symbols of the packet including in-band symbols* (see Fig. 1, col. 65, lines 40-52, **command BUSY/FILL/IDLE symbols are transmitted**) *and non-contiguous out-of-band symbols* (see col. 65, line 43 – col. 66, line 11, **command FILL or IDLE symbols are inserted until receiving a non-contiguous out-of-band READY command symbol and the transmission of the message packet can resume**);

*after receiving the first portion of symbols of the packet* (see col. 65, lines 40-47), *receiving contiguous out-of-band symbols representing the control information* (see Fig. 1, col. 65, lines 47-49, **receiving the IDLE command symbols**); and

*after receiving the out-of-band symbol, receiving a second portion of the symbols of the packet* (see col. 65, lines 49-52, **resume receiving the interrupted message packet**);

*wherein the control information interrupts the reception of the packet of symbols* (see col. 65, lines 41-42 and lines 51-52, **inserting the interrupt FILL command symbol**).

**Regarding claim 44**, Sonnier teaches all limitations set forth in the rejection of claim 39.

Sonnier does not expressly teach *wherein in-band symbols are transition optimized and an out-of-band symbol that is not transition optimized*.

Sonnier does expressly teach receiving an *in-band symbol* (see col. 65, lines 40-52) and receiving an *out-of-band control symbol by sending the interrupt FILL command symbol to stop the transmitting of the symbols of the packet* (see col. 65, lines 51-52) to optimize the receiving the in-band control information symbol and to interrupt/*to not optimize* with the FILL command symbol during receiving of portions of packet messages.

It would have been obvious to one of ordinary skill in the art, at the time invention was made, to employ the Synchronized Data Transmission Between Elements Of A Processing System as taught by Sonnier to arrive the claimed invention as specified in claim 38.

The suggestion/motivation for doing so would have been to make large improvements in reliability for communication between connecting devices (see col. 1, line 65 – col. 2, line 12).

4. Claims 9, 17, 18, 26, 36, 45, 46 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sonnier in view of Latif et al. (6,400,730), hereinafter is referred as Latif.

**Regarding claims 9, 17, 18, 26, 36, 45, 46 and 53**, Sonnier teaches all claimed limitations set forth in the rejection of claims 1, 12, 19, 29, 39 and 47.

Sonnier does not expressly teach *the control information controls communications nodes of a storage area network*.

Art Unit: 2665

However, *the control information controls communications nodes of a storage area network* is known in the art for providing a compatible and an efficient data packets routing in a storage network switch as evidenced by Latif.

Latif teaches *the control information controls communications nodes of a storage area network* (see Figure 1, col. 5, lines 50-67, col. 6, lines 1-5, SAN) for the purpose of providing an efficient data packets routing in a storage network switch.

One skilled in the art would have recognized the advantage of using *the control information controls communications nodes of a storage area network* as taught by Latif in the system of Sonnier for the purpose of providing a reliable data packets routing in a storage network switch.

Thus, it would have been obvious to one skilled in the pertinent art at the time the invention was made to apply Latif's teaching of the control information controls communications nodes of a storage area network in Sonnier's system with the motivation of providing a compatible and an efficient data packets routing in a storage network switch (see col. 1, line 64 – col. 2, line 12).


### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1, 12, 19, 29, 39 and 47 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2665

*Conclusion*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Khuong whose telephone number is 571-272-3157. The examiner can normally be reached on 9AM - 5PM.
7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Lee T. Khuong  
Examiner  
Art Unit 2665



ALPUS H. HSU  
PRIMARY EXAMINER